

## REMARKS

By this amendment, claims 49-54 are added; claims 12, 14 and 17 are amended; and claim 13 is canceled. Support can be found in the application as filed, for example in the original claims; at page 36, lines 24-26 and page 2 of the Sequencing Listing. Claim 12 is amended to incorporate subject matter previously recited in claim 13. Claims 14 and 17 are amended for corresponding dependency. No issue of new matter arises.

### *Claim Objections*

Claim 14 was objected to as containing deleted text. This objected to text does not appear in the present listing. Reconsideration and withdrawal of this objection are respectfully requested.

### *Rejections under 35 U.S.C. §103*

Claims 12-15, 17, 47 and 48 were rejected under 35 U.S.C. §103 over Bailleul (2003), Agrawal, Tang, Taylor, Bennet and Baracchini. Applicants respectfully traverse this rejection.

The applied references are alleged to teach or suggest related art. The Office Action alleges, *inter alia*, "vectors encoding such constructs, which would necessarily result in expression of short hairpin RNA" (shRNA). A shRNA molecule is single stranded. In view of the single stranded molecule inherent in the reference teachings, at least the "double stranded" recitation of claim 12 cannot properly be said to have been suggested by these references. The "hairpin" construct is clearly a self complementary single strand, not two strands. Genes II (Lewin, 1985) states: "**Hairpin** describes a double helical region formed by base pairing between adjacent (inverted) complementary sequences in a single strand of RNA or DNA." See, e.g., Glossary: page 686. More contemporary understandings of the term, "hairpin" are consistent with this glossary definition. See, e.g.:

"Stem-loop intramolecular base pairing is a pattern that can occur in single-stranded DNA or, more commonly, in RNA. The structure is also known as a hairpin or hairpin loop. It occurs when two regions of the same molecule, usually palindromic (reads the same in both directions, for example AAGC in one direction would read TTCG in the other and it would be a palindrome in

relation to a DNA) in nucleotide sequence, base-pair to form a double helix that ends in an unpaired loop.”

A “hairpin is clearly understood in the art to be single stranded. Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 12-15, 17, 47 and 48 were rejected under 35 U.S.C. §103 over Bailleul (1997) in view of Tuschli, Shi and Hannon. Bailleul is alleged to teach the sequence of the presently recited SEQ ID No. 21 and its relation to leptin signaling. The secondary references are alleged to teach siRNAs, vectors expressing shRNAs and general utilities of siRNA and shRNA.

The molecular constructs are similar to those alleged above in the previous rejection. Hairpins as discussed above continuously have been understood to be self complementary single stranded molecules. The references accordingly fail to teach or suggest all the limitations of the claims. Accordingly, the rejection is deemed improper.

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP §2143.

Reconsideration and withdrawal of this rejection are respectfully requested.

### ***New Claims***

New claims 49-54 are added. Claim 49 could have been dependent over the previous claim 12 and thus is proper in the present application. The sequence of SEQ ID NO. 2 is not taught or suggested in the applied art. Applied art therefore cannot be said to teach or suggest all the claim limitations. These claims are therefore deemed allowable.


### ***Conclusion***

In view of the above amendments and remarks, Applicants respectfully submit that the application is now in condition for allowance and request prompt issuance of a Notice of Allowance. If the Examiner wishes to suggest additional amendment that might put the application in even better condition for allowance he is invited to contact Applicants' representative at the telephone number listed below.

### ***Fees***

No fees not otherwise provided for are believed necessitated by the instant response. However, should this be in error, authorization is hereby given to charge Deposit Account no. 18-1982 for any underpayment, or to credit any overpayments.

Respectfully submitted,

  
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